



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/731,264	12/05/2000	Benjamin A. Bonner	005082/CMP	9053

32588 7590 09/12/2002

APPLIED MATERIALS, INC.
2881 SCOTT BLVD. M/S 2061
SANTA CLARA, CA 95050

EXAMINER

DEO, DUY VU

ART UNIT	PAPER NUMBER
----------	--------------

1765

5

DATE MAILED: 09/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/731,264

Applicant(s)

BONNER ET AL.

Examiner

DuyVu n Deo

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshida et al. (JP 11-138418).

US 6,191,038 is considered as the correct translation of JP 11-138418 and its translation will be provided upon applicant's request.

Yoshida describes a method for polishing semiconductor substrate comprising: polishing the substrate to remove a first portion of the substrate by holding the substrate against the pad with a polishing force while applying a slurry to the pad; rinsing the polishing pad; polishing the substrate to remove a second portion of the substrate by holding the substrate against the pad with a polishing force while applying the slurry to the pad (col. 13, line 1-36).

Referring to claim 3, the first and second portion would have to equal to the amount selected for first and second polishing steps. This would read on claimed of first and second portion equal to selected amount.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida.

Unlike claim 6, Yoshida doesn't describe the substrate is held against the pad with a 0 psi force while rinsing the pad. However, he describes the rinsing step starts after the first polishing step is finished and in the substrate is pressed against the pad starting the second polishing step (col. 13, line 13-25). This would indicate that the wafer is held against the pad with no force. Therefore, it would have been obvious that the substrate would not forced against the pad while rinsing because there is no polishing of the substrate during the cleaning of the pad.

Referring to claim 5, rinsing and cleaning the pad with deionized water is well known to one skilled in the art (please see cited Cadien below).

5. Claims 7, 9, 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida, and further in view of Woo (US 5,816,891).

Unlike claimed invention, Yoshida doesn't describe transferring and polishing the substrate at a second polishing station. Woo teaches a method for CMP of semiconductor substrate where he describes transferring and polishing the substrate at a second polishing station (col. 5, line 39-65; col. 7, line 23-55). It would have been obvious for one skilled in the art to

Art Unit: 1765

modify Yoshida's method in light of Woo because Woo teaches that polishing at different polishing pad (or polishing station) would reduce polishing time, results in less polish pad loading, and highest polish rate produced by a freshly conditioned polished pad can be maintained (col. 5, line 38-55).

Referring to claim 13, it would be obvious that the polishing of the substrate could be at the second polishing before the first polishing station as long as each station could be used to polish the substrate with an expectation of a reasonable success.

6. Claims 2, 4, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida or Yoshida/Woo as applied to claims 1 and 7 above, and further in view of admitted prior art.

Referring to claims 2, 4, 8, and 10 using either stable or unstable polishing slurry which is mixed in a point of use mixing system before use is well known to one skilled in the art as shown in pages 1 and 2 of the specification. Therefore, using slurry such as slurry mixed in a point of use would have been obvious to one skilled in the art in order to provide a slurry to polish the substrate with an expectation of a reasonable success.

Drawings

7. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: there are no reference signs 40 and 42 in figures 1 and 3 as described in page 7 of the specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to

Art Unit: 1765

avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

8. Cadien et al. (US 5,954,975) is cited to show prior art (col. 9, line 27).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DuyVu n Deo whose telephone number is 703-305-0515.

DVD

September 10, 2002


BENJAMIN L. UTECH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700